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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/516,693

12/06/2004

Masamichi Inenaga

Q85096

6877

65565 7590 08/09/2007  
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EXAMINER

AKANBI, ISIAKA O

ART UNIT

PAPER NUMBER

2886

MAIL DATE

DELIVERY MODE

08/09/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/516,693

Applicant(s)

INENAGA ET AL.

Examiner

Isiaka O. Akanbi

Art Unit

2886

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 14, 2007 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 2 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Paragraph [0043] of the published application as argued by applicant does not appear to adequately disclosed applicant claim that recite " the apparatus is operable to sequentially load data without stopping the motor" as claimed in claims 1 and 2. Therefore this raises a new matter.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyokawa et al. (5,289,263) in view of Mimura et al. (5,880,816)

As to claim 1, Kiyokawa teaches of a wafer pre-alignment apparatus comprising a wafer rotating member (M0) capable of rotating a disk-shaped wafer held on a table having a vertical rotating axis, a rotation detecting member (encoder) for detecting a rotating position of the wafer rotating member and converting the rotating position detected into an electric signal (col. 6, line 23-24), a light emitting member (M1) for emitting light toward the periphery of the wafer held by wafer rotating member (col. 5, line 3-4), a CCD linear sensor (19) including a large number of pixels linearly arranged in a predetermined order, for reading stored charges successively from the first pixel according to a transfer pulse signal and successively outputting stored charges of all the pixels as electric signals, a signal processing member (24) for repeatedly detecting the edge positions of the wafer at a plurality of optional points over the outer periphery of the wafer when it receives a signal from the CCD linear sensor and a signal from the rotation detecting member and storing these edge positions thus detected in a memory, and acquiring at least one of an orientation - flat position, notch position and center position of the wafer on the basis of the edge positions detected and an up-down counter (38) counting signals (i.e. pulses)(i.e. clockwise/counterclockwise) received from the rotation detecting member(encoder)(col. 12, line

14-57), a measured angle setting register (M $\theta$ ) for storing angular value information which is obtained and a comparator (22) for comparing the angular value information set in the measured angle setting register and the counted value of the up-down counter (figs. 6, 7, 8, 12-14, 18 and 21)(col. 7, line 22-49)(col. 16, line 50-64).

Kiyokawa is silent regarding the angular value information which is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation). It would have been obvious to one having ordinary skill in the art at the time of invention to provide angular value information that is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation) for the purpose of putting the value into a more convenient unit.

Further Kiyokawa discloses using a motor and CCD to acquired at least one of an orientation - flat position, notch position and center position of the wafer on the basis of the edge positions detected.

Kiyokawa fails to disclose wherein the apparatus is operable to sequentially load data without stopping the motor, however, it would have been obvious at least to one of ordinary skill in the art to substituted one known device/element (i.e. pulse/step motor) for another (i.e. continues motor) as evidenced by Mimura (col. 5, line 33-35)(col. 12, line 21-54) to achieve the predictable result of acquiring at least one of an orientation - flat position, notch position and center position of the wafer on the basis of the edge positions detection with accuracy.

As to claim 2, Kiyokawa teaches of a wafer pre-alignment apparatus comprising a wafer rotating member (M $\theta$ ) capable rotating a disk-shaped wafer held on a table having a vertical rotating axis, a rotation detecting member (encoder) for detecting a rotating position of the wafer rotating member and converting the rotating position detected into an electric signal (col. 6, line

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23-24), a light emitting member (M1) for emitting light toward the periphery of the wafer held by the wafer rotating member, a CCD linear sensor (19) including a large number of pixels linearly arranged in a predetermined order, for reading out stored charges successively from the first pixel according to a transfer pulse signal and successively outputting stored charges of all the pixels as electric signals and a signal processing member (24) for repeatedly detecting the edge positions of the wafer at a plurality of optional points over the outer periphery of the wafer when it receives a signal from the CCD linear sensor and a signal from the rotation detecting member and storing these edge positions thus detected, and acquiring at least one of an orientation-flat position, notch position and center position of the wafer on the basis of the edge positions detected, setting, in a measured angle setting register (M $\theta$ ), inputting a signal supplied from the rotation detecting member (encoder) in an up-down counter (38) up-counts (i.e. clockwise) during normal rotation of the wafer rotating member and down-counts (i.e. counterclockwise) during reverse rotation of the wafer rotating member, if the comparator (22) determines that rotation position information obtained as a result of an increase/decrease of the counted value in the up-down counter during the rotation of the wafer rotating member is equal to the set value in the measured angle setting register, zero-clearing (i.e. stop) the counted value simultaneously with outputting of a measurement command (col. 7, line 36-49), repeatedly detecting the edge position of the wafer at the measurement points over the outer periphery of the wafer, storing detected values thus obtained in a memory (figs. 13-14)(col. 18, claim 8) and acquiring at least one an orientation flat position, notch position and center position of the wafer (col. 7, line 22-49)(col. 16, line 50-64), however the reference of Kiyokawa is silent regarding the angular value information which is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation). It would have been obvious to one having ordinary skill in the art at the time

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of invention to provide angular value information that is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation) for the purpose of putting the value into a more convenient unit.

Further Kiyokawa discloses using a motor and CCD to acquired at least one of an orientation - flat position, notch position and center position of the wafer on the basis of the edge positions detected.

Kiyokawa fails to disclose wherein the apparatus is operable to sequentially load data without stopping the motor, however, it would have been obvious at least to one of ordinary skill in the art to substituted one known device/element (i.e. pulse/step motor) for another (i.e. continues motor) as evidenced by Mimura (col. 5, line 33-35)(col. 12, line 21-54) to achieve the predictable result of acquiring at least one of an orientation - flat position, notch position and center position of the wafer on the basis of the edge positions detection with accuracy.

### ***Response to Arguments***

Applicant's arguments/remarks, (see pages 5), filed on 09 April 2007, with respect to the rejection(s) of claim(s) 1-2 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of claim amendment.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m.- 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

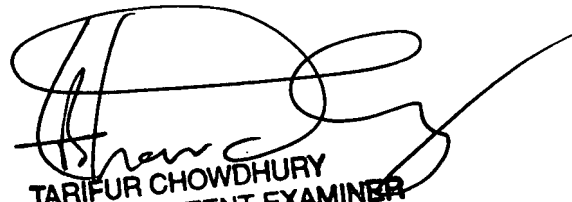
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supervisor, Tarifur R. Chowdhury can be reached on (571) 272-2287. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi

August 3, 2007



TARIFUR CHOWDHURY  
SUPERVISORY PATENT EXAMINER